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Three lichenized fungi new to Turkey

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Abstract — In this study, three lichenized fungi (*Gyalecta ulmi*, *Ochrolechia subviridis* and *Opegrapha viridis*) are reported for the first time from the Turkish provinces of Çanakkale, İstanbul and Kırklareli. Comments on their habitat and substrata and a short description are provided for each taxon.

Key words — *Ascomycota*, epiphytic lichens, *Quercus* sp., *Fagus* sp.

Introduction

The total number of papers referring to lichens from Turkey was 361 at the end of 2004 (John 2004). Thereafter many studies have been carried out about the lichens of Turkey (Tufan et al. 2005, Güvenç et al. 2006, John & Türk 2006, Halıcı et al. 2007, Kınalıoğlu 2007, Candan & Türk 2008, Çobanoğlu et al. 2008, Halıcı & Aksoy 2009). In spite of the increase in the number of studies, knowledge of the lichen flora in Turkey is still insufficient. This paper aims at contributing to the knowledge of the lichen flora of Turkey.

Materials and methods

The specimens are stored in BULU (Herbarium of Uludag University, Science and Art Faculty, Bursa, Turkey) and their accession numbers are given in parenthesis at the end of the locality information. The specimens were examined with an Olympus SZ40 model stereomicroscope, and a Kruss light microscope. Specimens were examined in water, 10% KOH, and Lugol's iodine solution. Spore measurements were generally carried out in water.

Species recorded

Gyalecta ulmi (Sw.) Zahlbr. 1905

Detailed descriptions are provided by Clauzade & Roux (1985: 374), Purvis et al. (1992: 262) and Wirth (1995: 412).

Thallus thin or thick, smooth or cracked, whitish. Apothecia 0.5–2mm diam, numerous; true exciple pale, white-pruinose, smooth or often crenate; disc

concave orange-brown to chestnut-brown and pruinose. Ascospores 15–25 × 5–9 µm, 3–septate, broad ellipsoid.

Specimen examined—**ÇANAKKALE:** Bayramiç; Kaz Dağı, Yeşilköy, Kırgındere place, oak woodland, 39°51'56"N, 26°50'46"E, alt. 643 m, on bark of *Quercus frainetto*, 18 Aug. 2005, leg. S. Oran, det. S. Oran (BULU 13843).

Gyalecta ulmi generally grows on calcareous substrata, such as soil and mosses in limestone areas, and is found on mature trees (e.g. *Ulmus*) in humid and sheltered sites (Purvis et al. 1992). Zedda (2002) reported this species from the trunks of old *Quercus pubescens* from Sardinia (Italy) and we recorded it from the trunks of *Q. frainetto*.

This is a rather rare lichen, found from Scandinavia to the Mediterranean-montane zone and known only from Europe and North Africa. Its populations are declining in many parts of Europe and it is a good indicator of long forest ecological continuity (Purvis et al. 1992, Wirth 1995, Zedda 2002).

Ochrolechia subviridis (Høeg) Erichsen 1930

Detailed descriptions are provided by Clauzade & Roux (1985: 530), Purvis et al. (1992: 400), Wirth (1995: 617), and Fos (1998: 210).

Thallus thick, smooth or warted, often densely covered with soft, branched or firm coralloid, cylindrical isidia, to 0.5 mm diam, becoming confluent towards centre and forming a continuous, uniformly concolorous crust, often breaking down into granular soralia. Apothecia rare. Isidia KC (+) red, C (+) red.

Specimens examined—**ÇANAKKALE:** Çan; road of Bayramiç–Çan, in the vicinity of Hacıkasım village, oak woodland, 39°56'46"N, 26°48'53"E, alt. 297 m, on bark of *Quercus frainetto*, 06 Jul. 2005, leg. S. Oran, det. S. Oran (BULU 13595).

İSTANBUL: Sarıyer; Belgrad Forests, Topkoru place, oak forest, 41°11'05"N, 28°59'07"E, alt. 138 m, on bark of *Quercus petraea*, 12 Jun. 2006, leg. S. Oran, det. S. Oran (BULU 14619).

KIRKLARELİ: Demirköy; Demirköy–Sivriler road, 7. km, 41°48'19"N, 27°49'01"E, alt. 195 m, on bark of *Quercus petraea*, 24 Jul. 2006, leg. S. Oran, det. S. Oran (BULU 11658).

This widespread species is found on bark of woodland and wayside broad-leaved trees (like *Quercus*) in submontane localities, humid and non-eutrophicated areas (Purvis et al. 1992, Wirth 1995).

Ochrolechia subviridis is frequent and occurs in oceanic and suboceanic Europe, British Isles, North America, Japan, and Korea (Purvis et al. 1992). In Europe it is known from southern Scandinavia to the Mediterranean region (Zedda 2002, Wirth 1995) and Syria (John et al. 2004).

Opegrapha viridis Pers. 1803

Detailed descriptions are provided by Clauzade & Roux (1985: 540), Purvis et al. (1992: 414) and Wirth (1995: 628).

Thallus very thin or inconspicuous, usually in small (2–4 cm) patches, dull olive or brown. Apothecia 0.4–1 × 0.12–0.4 mm, sessile, initially semi-immersed, short, rounded, scattered, seldom shortly furcate, often eliptical or button-like. Exciple K (+) olive-green; hymenium I (+) red. Ascospores 23–60 × 6–9 µm, 8 to 15–septate, with a perispore.

Specimens examined—**KIRKLARELİ:** Demirköy; road of Sarpdere–Balaban, oak and beech forest, 41°52'19"N, 27°36'17"E, alt. 351 m, on bark of *Fagus orientalis*, 15 Jun. 2006, leg. S. Oran, det. S. Oran (BULU 15001). Kofçaz; road of Kula–Kocayazı, 9 km before Kocayazı, oak and beech forest, 41°59'42"N, 27°16'30"E, alt. 492 m, on bark of *Fagus orientalis,* 16 Jun. 2006, leg. S. Oran, det. S. Oran (BULU 15115). Demirköy; Demirköy–Sivriler road, 7. km, 41°48'19"N, 27°49'01"E, alt. 195 m, on bark of *Quercus cerris*, 24 Jul. 2006, leg. S. Oran, det. S. Oran (BULU 15326).

Opegrapha viridis grows on smooth, young (rarely old) shaded bark, particularly on broad-leaved trees (e.g., *Acer, Corylus, Ilex, Quercus, Salix*) in old woodland (Purvis et al. 1992).

This species occurs throughout the Euro-Siberian region and is widespread in Europe from southern Scandinavia to the Mediterranean region; it is also known from Asia (Wirth 1995, Zedda 2002). It is very local and recorded from England, Scotland, Ireland, Sweden, France, Germany, North America, and Tasmania (Purvis et al. 1992).

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